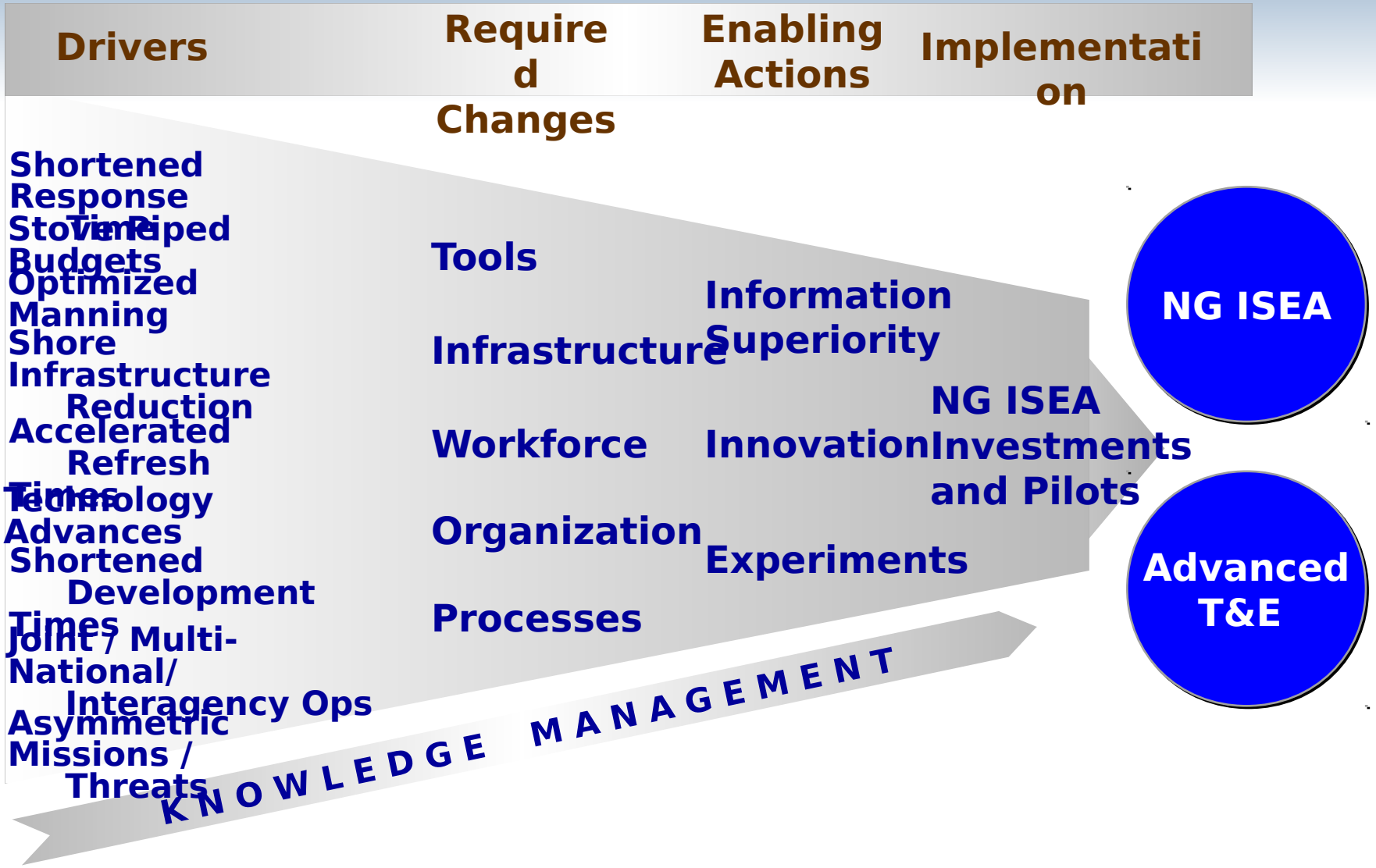
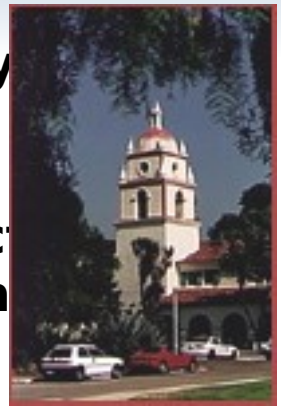
Next Generation ISEA Roadmap



Required Changes

TOOLS
- Data Access, Integration
- Distance Support
- Predictive

ORGANIZATION
- Flexibility
- Teaming
  - Govt
  - Contrac
  - Academ



PROCESSES
- Test & Evaluation
- Fleet Support
- Technical Documentation
- Installation / Modernization
- Readiness Assessments

INFRASTRUCTURE
- Connectivity
- Facilities & Equipment
- Joint / Multinational / Interagency Labs
- Virtual Test

WORKFORCE
- Composition
- Recruiting / Retention
- Workforce

Operational Readiness Test System Tech Assist Remote Support (ORTSTARS)

Hai Tonthat
PHD NSWC Code A41
(805)228-7287
Tonthath@phdnswc.navy.mil

Purpose

- **PHD initiative to develop an In-Service-Engineer concept to provide emergency remote technical assistance support for the AWS via ORTS from shore to ship.**
- **Funded by NAVSEA PHD Command for proof of concept**

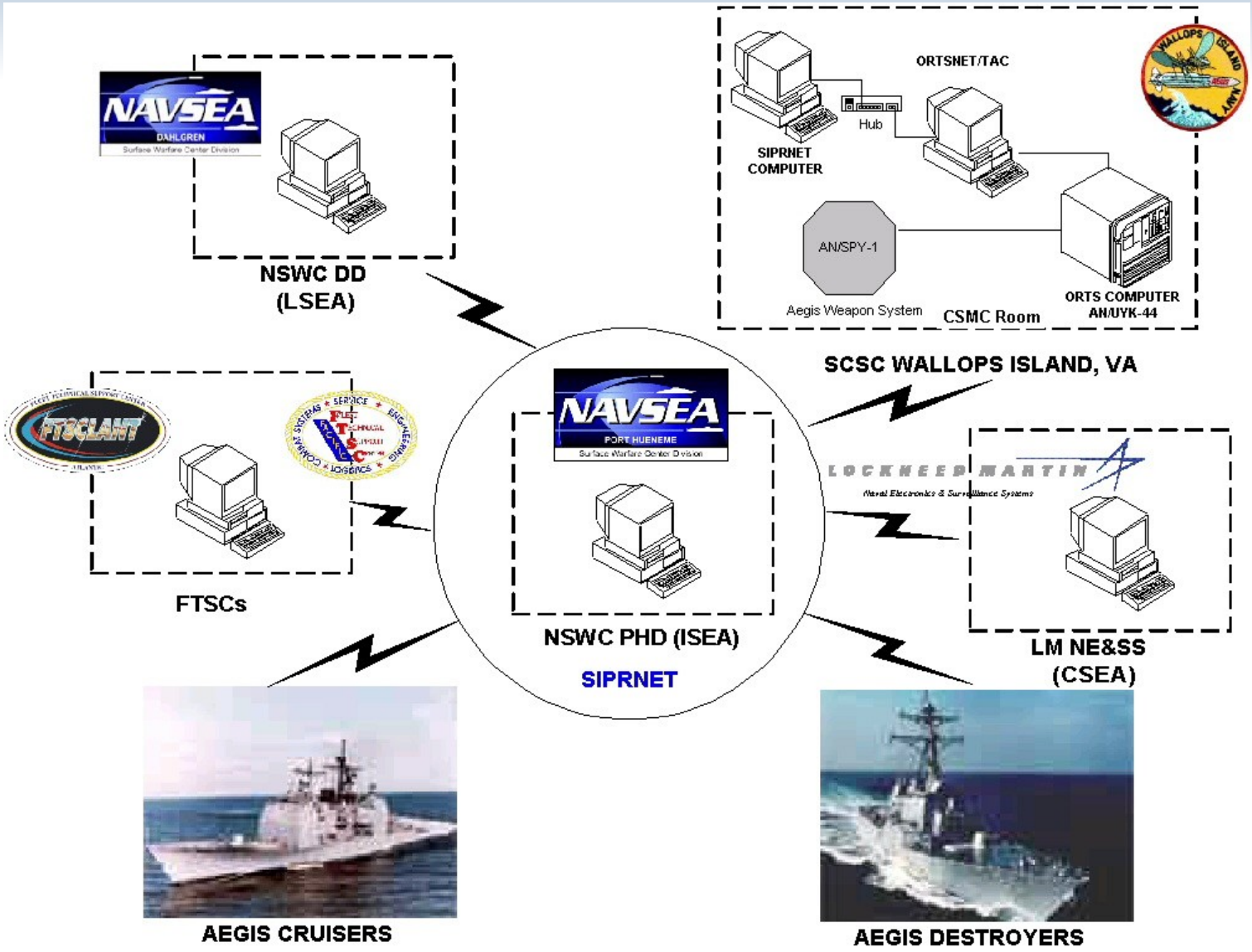
ORTS

- ORTS Overview:
  - **Operational Readiness Test System provides automatic and operator initiated on line monitoring of fault detection (FD) and fault isolation (FI) test operations performed on AEGIS Weapon System (AWS) elements.**

ORTSTARS

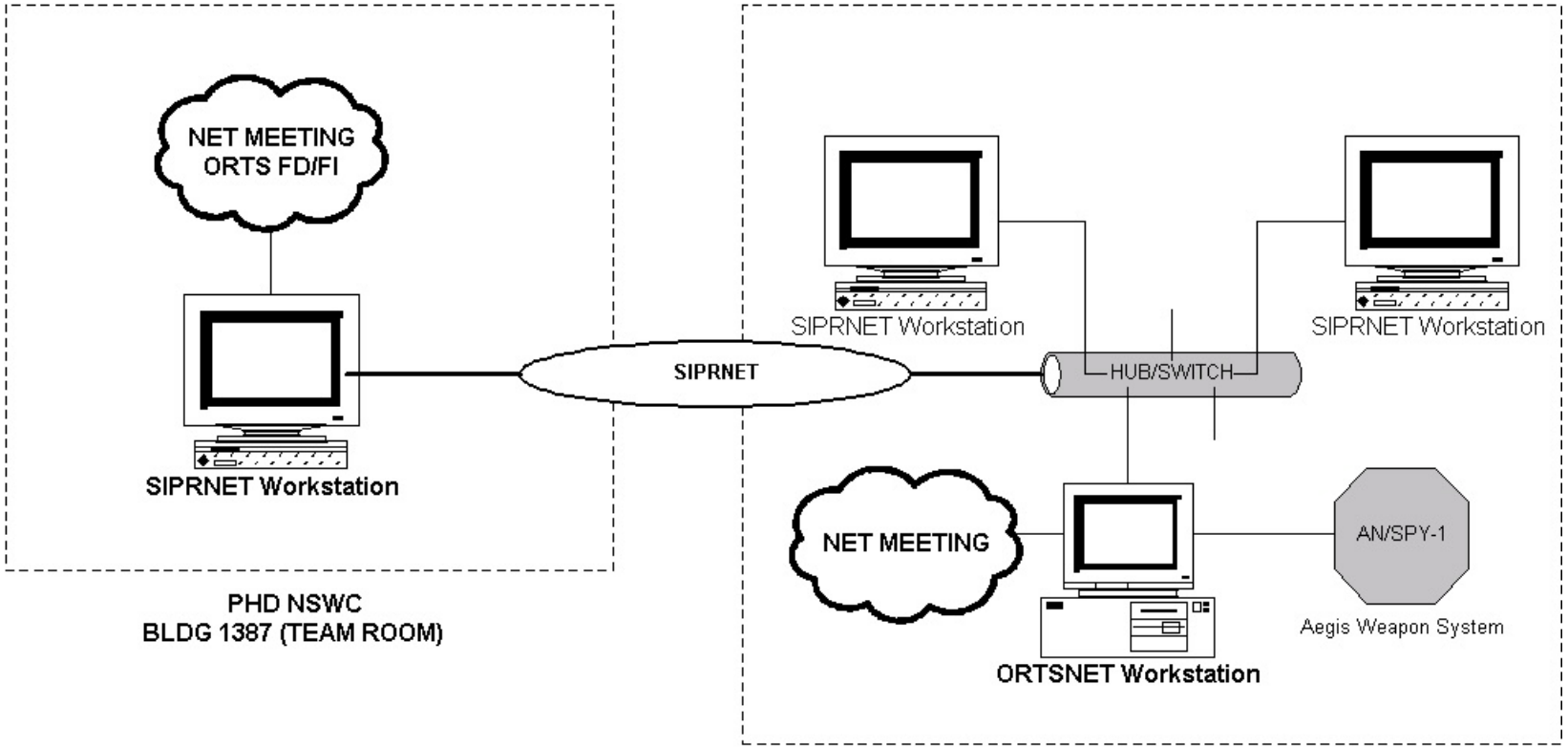
- Objectives
  - **Provide tech assist remote support via classified network (SIPRNET)**
  - **Real Time support for Aegis Weapon System readiness**
  - **Reduce the elapse time between the service request and service support**
  - **Provide direct data and communication between ship and support agency**
    - **Better definition (FD/FI/Corrective Maintenance)**
    - **Better support service (Resources available)**
    - **Reduce Cost (Travel, man hour)**
  - **Support reduced manning concepts**

ORTSTARS Architecture



ORTSTARS Concept via ORTSNET/SIPRNET

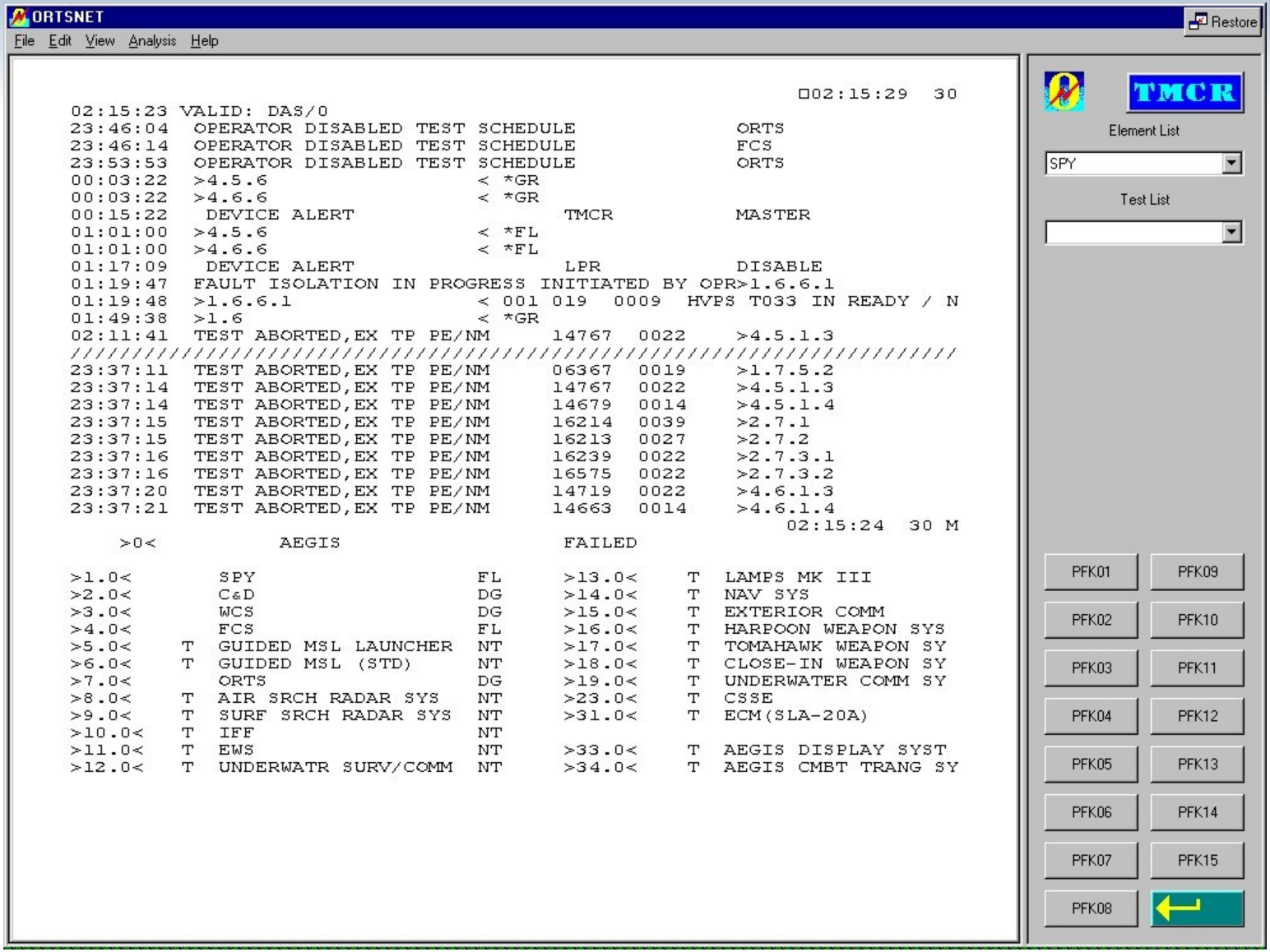
- **Utilizing NetMeeting application to remotely connect and control the ORTSNET workstation onboard USS JACINTO (CG-56) through SIPRNET classified network connection.**



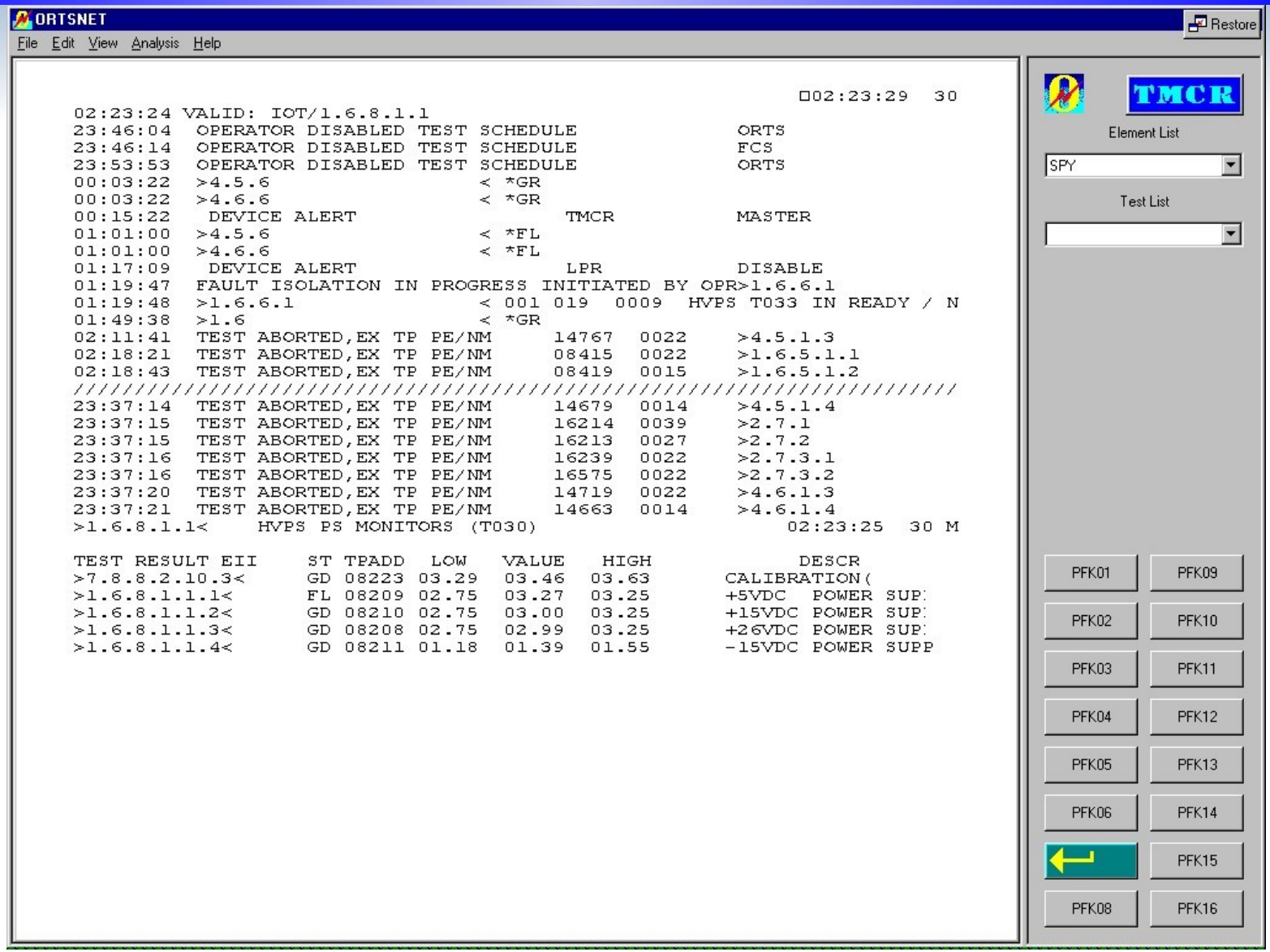
ORTSTARS Connection and Configuration

- Setup and connect ORTSNET Workstation as a SIPRNET client.
- Two (2) separated removable hard drives for each network configuration.
- Remote Operation:
  - **ORTSTARS enabled. (Install ORTSTARS hard drive)**
  - **Configure as a node in SIPRNET LAN**
  - **Ship is monitoring the process.**
  - **Testing is collaborated with shore site**
- Local Operation:
  - **ORTSTARS disabled. (Remove ORTSTARS hard drive and re-install ORTSNET hard drive)**
  - **Configure as a node in ORTSNET LAN**
  - **Normal ORTS operation**
  - **No remote access**

Monitor AEGIS WEAPON SYSTEM STATUS



PERFORM FAULT DETECTION and ISOLATION



Services

- What service will it provide?
  - **Real time remote tech assist**
    - **Real time readiness view of AWS by ISEA**
  - **Maintenance support**
    - **How do I?**
    - **My fault result is?**
    - **Are my MRC’s, Drawing, Tech Manual correct?**

Access Authorization

- Who controls the service?
  - **Ship CREW must request service and connect ORTSNET to SIPRNET .**
- Can anyone test my ship without my knowing?
  - **No! Ship must request and give permission for remote connection**
  - **Ship is capable of monitoring the tests being performed**

ORTSTARS LOGISTICS SUPPORT

Remote Sensing – Distance Support

ISEA

DISPLAY

Diagnose Failure to LRU

Repair/Fix - LRU

AEL → Tools

TM → Trouble Shooting

PMS → Maintenance Action

APL → Part Replacement

- Query Other Ships for Part
- Identify Part Location

ISEA

FLEET

Query Other Ship

Cross Deck Part

=

ORTSTARS

ORTS Workstation

Distance Support Logistics

Next Generation ISEA
In Service Engineering

Test and Evaluation

- Joint Testing
- Live Data Analysis
- Modeling Simulation & Live Fire Integration
- Remote Test Conduct & Control

Training

- Real Time Training
- Mission Adaptive Capabilities & Limitations
- Interactive Courseware
- Human System Integration
- Battle Force Simulation Training

Improvement

- Download Latest Changes
- Technology Refresh
- Update Technical Documentation
- Change Verification & Validation
- Automated Configuration Control

Readiness

- Remote System Monitoring
- Remote Diagnostics
- Remote Casualty Resolution
- Readiness Status
- Predictive Analysis
- Predictive Logistics
- Proactive Support

Integrated Solutions that Link Capability, Maintainability, Reliability and Readiness

Accelerate Change **Improve Readiness** **Reduce Cost**

The Next Generation … In Summary

- **More Complex Fleet Requirements**
  - Joint / Coalition / Interagency Operations
  - Maximum Readiness within Finite Resources
- **Challenging Operational Environment**
  - Shorter Time Constant
  - SEA Power 21
  - Asymmetric Missions
- **Knowledge Focus**
  - Mission Control Center
  - Aggregation of Subject Matter Expertise (Collaborative Engineering Environment)

ENSURING SAFE & EFFECTIVE WARFARE SYSTEMS REMAINS THE GOAL